[h2] What is Claimed is:

[1 (c1)]

A method of forming n-well and p-well regions on a substrate, comprising the steps of:

forming a first mask structure having a given thickness on the substrate;

carrying out n-well implants into regions of the substrate exposed by the first mask structure;

substantially reducing said thickness of said first mask structure;

carrying out a first p-well implant through said first mask structure, so that a first implant region is formed below the n-well and a second implant region is formed below the first mask structure;

forming a second mask structure on the substrate having an image generally complementary to the first mask structure; and

carrying out p-well implants into regions of the substrate exposed by the second mask structure.

[2 (c2)]

The method as recited in claim 1, wherein said step of carrying out a first p-well implant through the first mask structure does not increase threshold voltages of transistors subsequently formed adjacent an interface between said n-well and said p-well.

[3 (c3)]

The method as recited in claim 2, wherein said step of carrying out a first p-well implant through the first mask structure does not produce significant scattering of implanted ions.

[4 (c4)]

The method as recited in claim 1, wherein said first masking structure comprises a first layer disposed on the substrate and a second layer disposed on the first layer, said second layer being

thicker than said first layer.

[5 (c5)]

The method of claim 4, wherein prior to said step of carrying out n-well implants said second layer is imaged to expose said regions of the substrate.

[6 (c6)]

The method of claim 5, wherein during said step of carrying out n-well implants said first layer prevents damage to the substrate.

[7 (c7)]

The method of claim 5, wherein prior to said step of carrying out a first p-well implant portions of said first layer exposed by said second layer are removed, and then remaining portions of said second layer are removed.

[8 (c8)]

The method as recited in claim 4, wherein said second layer is at least six times thicker than said first layer.

[9 (c9)]

The method as recited in claim 4, wherein said first layer is selected from a group consisting of polysilicon, silicon oxide, and silicon nitride.

[10 (c10)]

The method as recited in claim 4, wherein said first layer is approximately 100-300 nm thick.

[11 (c11)]

The method as recited in claim 9, wherein said step of carrying out a first p-well implant through the first mask structure does not produce significant scatterings of implanted ions.

[12 (c12)]

The method as recited in claim 4, wherein said second layer comprises photoresist.

[13 (c13)]
The method as recited in claim 12, wherein said photoresist is approximately 1800-2500nm thick.

[14 (c14)]
The method as recited in claim 9, wherein said step of carrying out a first p-well implant through the first mask structure is carried out at an energy of approximately 550 kEv.

[15 (c15)]
The method as recited in claim 14, wherein said step of carrying out a first p-well implant through the first mask structure is carried out at a dose of approximately 2.5 x 10 e 14 per cm2.

[16 (c16)]
The method as recited in claim 10, wherein said first masking layer is comprised of a material selected from the group consisting of polysilicon, silicon nitride, and silicon oxide.

[17 (c17)]
The method as recited in claim 16, wherein said first masking layer is approximately 100-300A thick.

[18 (c19)]
A method of forming abutting retrograde n-well and p-well regions on a substrate, comprising the steps of:

forming the retrograde n-well by implanting with a first dopant species; and

forming the retrograde p-well by first carrying out a deep implant with a second dopant species under conditions that substantially reduce scattering of said second dopant species into abutting regions of said retrograde n-well.